

World Ocean Database Project

Sydney Levitus, Tim Boyer, Hernan Garcia, John Antonov and Ricardo Locarnini
NOAA National Ocean Data Center, Silver Spring, MD

Project Summary

The “World Ocean Database Project” has the goal of creating the most comprehensive, global, scientifically quality-controlled ocean profile-plankton database possible with all data in one common format. Releases of this database include *World Ocean Database 2005*, *World Ocean Database 2001*, *World Ocean Database 1998*, and *World Ocean Atlas 1994*. Data for 33 variables are available including temperature, salinity, oxygen, nutrients, and tracers among others. There are approximately 7.9 million temperature and 2.6 million salinity profiles included in the most release of this database (World Ocean Database 2005 (WOD05)).

The utility of NODC profile databases is given in Figure 1 which documents that NODC databases and products based on these databases have been cited more than 4400 times during the past 24 years.

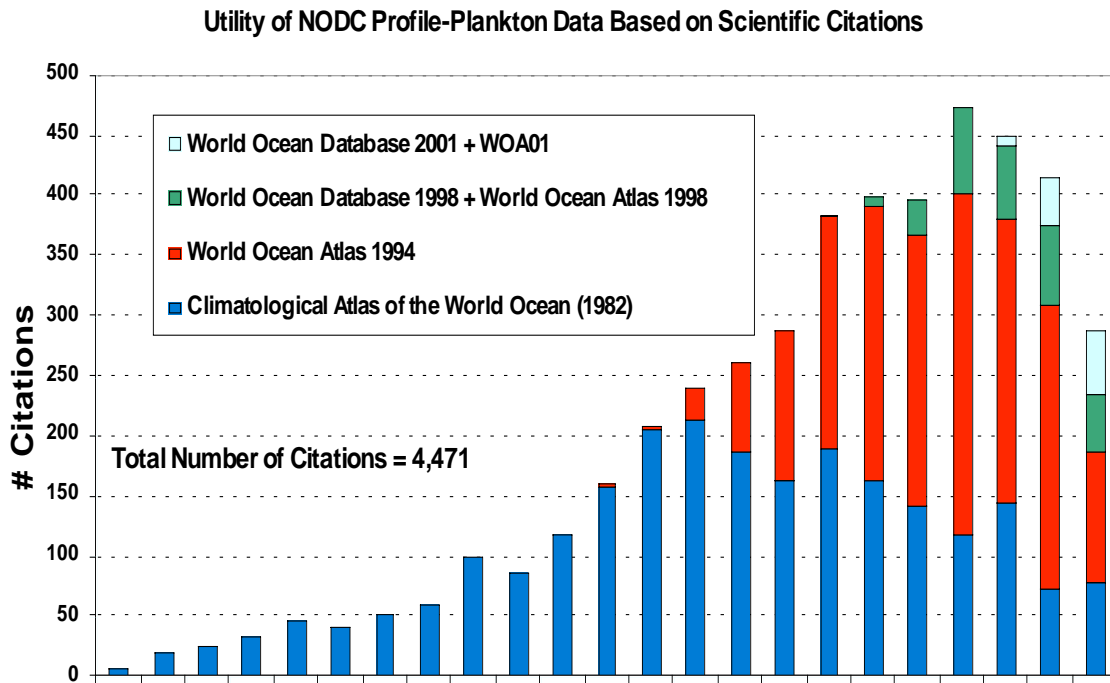


Figure 1. Time series of the number of citations as a function of year for NODC profile databases and products based on those databases.

NODC data and related products are used as initial and boundary conditions in ocean models and for ocean acoustic tomographic inversions and as “sea-truth” for verifying models among many other uses

All data in the WOD series are available both on DVD as well as online. Figure 2 shows that more than 1 billion ocean profiles have been downloaded during the past three years alone.

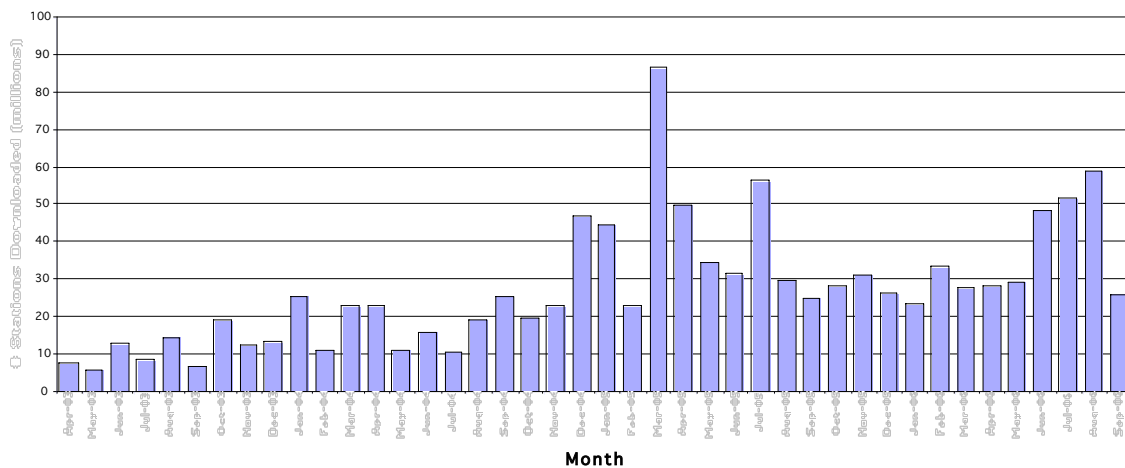


Figure 2. Number of casts in the World Ocean Database downloaded as a function of time.

Accomplishments

We published *World Ocean Database 2005* (WOD05) in FY06. WOD05 contains approximately 900,000 historical as well as modern temperature profiles not previously available. In addition there are many additional profiles for all the other variables included in WOD05 such as salinity, oxygen, nutrients etc. For the first time tracer data are included in the WOD series.

Publications and Reports

Boyer, T. P., J. I. Antonov, H. Garcia, D. R. Johnson, R. A. Locarnini, A. V. Mishonov, M. T. Pitcher, O. K. Baranova, and I. Smolyar, 2006: *World Ocean Database 2005*, Chapter 1: Introduction, NOAA Atlas NESDIS 60, Ed. S. Levitus, U.S. Gov. Printing Office, Wash., D.C., 182 pp., DVD.

Johnson, D. R., T. P. Boyer, H. E. Garcia, R. A. Locarnini, A. V. Mishonov, M. T. Pitcher, O. K. Baranova, J. I. Antonov, I. V. Smolyar, 2006: World Ocean Database 2005 Documentation. National Oceanographic Data Center Internal Report 18, Silver Spring, MD, 164 pp.